

Lesson 2C Mult. and Dividing w sign. digits.notebook

Multiplying and Dividing

- **certainty rule** = when multiplying and dividing measured values, your answer may only show as many significant digits as the measurement with the fewest number of significant digits.

Examples:

1) $131 \text{ m} \rightarrow 3 \text{ significant digits}$ ** answer can only have 2 significant digits **
 $\times 2.8 \text{ m} \rightarrow 2 \text{ significant digits}$
 $= 366.8 \text{ m}$ $\rightarrow 370$

$370 \text{ m} \rightarrow$ Can only have 2 significant digits, but have to round up after the 2nd digit because the 3rd digit is 5 or above.

We add the zero to hold the hundredth's place.

(remember we want the answer to be as close to the original).

2) $40.02 \text{ m} \rightarrow 4 \text{ significant digits}$ ** answer can only have 4 significant digits **
 $13.0005 \text{ sec} \rightarrow 6 \text{ significant digits}$
 $= 3.078343141 \text{ m/sec}$ 3.078 m/sec 3.108

$3.078 \text{ m/sec} \rightarrow$ Can only have 4 significant digits, but do not have to round up after the 4th digit because the 5th digit is 4 or less.

** Look at sample problem 1 on page 345 **

Now you try:

a) $2.86 \times 3.00 = 8.58$

b) $3.900 \div 2.82 = 1.382978723$
 $\rightarrow 1.38$

c) $2.89 \times 4.01 = 11.5889$
 $\rightarrow 11.6$

d) $17.3 \times 6.2 = 107.26 = 110$

e) $3.08 \times 1.2 = 3.696$
 $\rightarrow 3.7$